REMARKS

This application includes pending claims 9, 12-18, and 21-26. No amendments are presented in this response. The claims are presented for the Examiner's convenience. Reexamination and reconsideration of the application are requested.

This response is supported by the first Declaration of Edward Joseph Cigallio (the First Cigallio Declaration) and the Declaration of Richard Vincent Dougherty (and the Dougherty Declaration), which are cited below as evidence and were previously submitted on October 1, 2003 in response to the office action mailed June 13, 2003. In addition, this response is supported by a second Declaration of Edward Joseph Cigallio (the Second Cigallio Declaration), which is cited below as evidence and is submitted herewith. Both Mr. Cigallio and Mr. Dougherty are named inventors in this application and experts in the field of printed flexible packaging technology. First Cigallio Declaration, ¶ 1, and Dougherty Declaration, ¶ 1. Copies of all the Declarations are submitted herewith and Applicants respectfully submit that they are all germane to the rejection at issue and request their entry into the file as evidence for consideration in response to the final office action and, if necessary, for consideration on appeal.

Non-obviousness

Claims 9, 12-18 and 21-26 are rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 3,228,170 issued to Eisenstadt (the Eisenstadt Patent) in view of U.S. Patent 6,301,859 issued to Nakamura et al. (the Nakamura Patent). The Examiner cites the Eisenstadt Patent as disclosing all features of independent claims 9 and 18 of the application except the use of heat tubes in the die members. The Examiner reasons that it would have been obvious to one having ordinary skill in the art, at the time Applicants' invention was made, to modify the system disclosed in the Eisenstadt patent and incorporate the heat seal die as taught by the Nakamura patent providing an improved heat sealer effective to accomplish a uniform and proper

temperature distribution in the seal contact faces to secure a sealing streak in the resulting seal.

This rejection is respectfully traversed.

Independent claim 9 of this application describes a system for making portion control sized packaged flowable liquid-containing condiments in a portion size in the range from 1 to 5 ounces comprising a form/fill/seal apparatus and a heat seal die that includes longitudinal heat seal tubes for substantially uniform heating of the die face of the heat seal die. Independent claim 18 describes a corresponding method for making portion control sized packaged flowable liquid-containing condiments in a portion size in the range from 1 to 5 ounces. Second Cigallio Declaration, ¶ 4.

More particularly, the system of amended claim 9 describes a heat sealable material feeder, a flowable material feeder for feeding a flowable liquid-containing condiment, and a form/fill/seal apparatus structured and arranged for making portion control sized packages so that the portion control sized package has a portion size in the range from 1 to 5 ounces. Specifically, this form/fill/seal apparatus is structured and arranged for receiving the heat sealable material, forming a portion control sized package with the heat sealable material, filling the portion control sized package with the flowable liquid-containing condiment in a portion size in the range from 1 to 5 ounces, and sealing the portion control sized package. The form/fill/seal apparatus includes a heat seal die comprising first and second heating elements and first and second longitudinal heat tubes disposed, respectively, in first and second die members. The heat tubes, which can also be described as heat pipes, are disposed between the heating element and the die face of each die member for maintaining a substantially uniform heat seal temperature along the length of the die faces. The substantial uniformity of heat seal die temperature significantly decreases the occurrence of serum leakers, which are packages that leak liquid through the package seal. Second Cigallio Declaration, ¶ 5.

Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art at the time this invention was made to make portion control sized packaged flowable liquid containing condiments with a form/fill/seal system incorporating a heat seal die comprising heat tubes. Applicants respectfully submit that the Eisenstadt patent and the Nakamura Patent do not establish a prima facie case of obviousness under §103 because the Nakamura Patent expressly teaches away from using heat tubes in heat sealing dies (see col. 9, 1. 44 – col. 10, 1. 27) such that there is no motivation to modify the teaching of the Eisenstadt patent to use heat tubes in the manufacture of portion control sized packaged condiments and there is no reasonable expectation of success in doing so. A prior art reference that teaches away from the claimed invention is a significant factor to be considered in determining obviousness and does not establish a prima facie case of obviousness. M.P.E.P § 2145; M.P.E.P § 2143; *In re Fine*, 873 F.2d 1071, 5 USPQ 2d 1596 (Fed. Cir. 1988).

Furthermore, Applicant has submitted substantial evidence of secondary considerations indicating nonobviousness of the subject matter in independent claims 9 and 18. According to the recent Office Action, the Examiner did not consider such evidence supporting secondary considerations; when evidence is submitted, such secondary considerations must be considered by the Examiner. MPEP § 2144.08(B); *Graham v. John Deere*, 383 US1, 17, 86 Supreme Court 684, 694, 148 USPQ 459, 467 (1966); *Simmons Fastener Corp. v. Illinois Tool Works*, 739 F.2d 1573, 1575, 22 USPQ 744, 746 (Fed. Cir. 1984). Several secondary considerations such as failure to appreciate the problem to be solved, long felt but unsatisfied need despite availability of components, unexpected results, existence of licensees, and commercial success are evidence that the subject matter of the independent claims of this application describe patentable subject matter and such evidence must be considered.

The Problem To Be Solved

Form/fill/seal machines for making portion control sized packaged condiments simultaneously seal the bottoms, and then the tops of several packages, as many as 12 or more packages at once. In this circumstance, uniform temperature, pressure, and dwell time across the flexible packaging material are critical. When sealing flexible packaging material to make portion control sized packaging, the two opposing faces of the flexible material must be heated to at least a temperature at which the material softens, but not so high as to liquefy. The softened surfaces must be pressed together and maintained in intimate contact for a time sufficient to allow the entanglement of polymeric molecules across the interface separating the surfaces. As the sealed area cools, the entangled polymers effectively weld the two surfaces together, eliminating the previously separate surfaces and becoming a monolithic layer of material with thickness approximately equal to the sum of respective thickness of each of the two materials. This combination of pressure, temperature, and time of pressure application (dwell time) constitute the three basic variables used to control heat sealing processes. First Cigallio Declaration, ¶ 7.

In portion control packaging, narrow channel leaks can be formed when heat sealing flexible materials together to form the packages, particularly when the temperature along the length of the heat seal die is non-uniform such that the temperature in some areas falls below that required for adequate heat sealing. These narrow channel leaks can escape detection until after the portion control packages are packed and distributed in bags or cases. Channel leaks in portion control packaged condiments leak serum from the condiment inside the packages and can contaminate the entire contents of bags or cases of portion control sized packaged condiments. First Cigallio Declaration, ¶ 8.

The Cited References

The Eisenstadt patent discloses an automatic machine 20 for packaging liquids and semi liquids such as mustard and syrup in individual portion size heat seal packages 24. This machine 20 generally includes a heat sealable plastic film feeder, a fluid or semi fluid feeder 100 for feeding the fluid or semi fluid substance 27, and a form/fill/seal mechanism 40 for forming the packages. The form/fill/seal mechanism 40 includes heat sealing jaws (46 and 64) for sealing the edges of the pouches. Second Cigallio Declaration, ¶ 6.

The machine described in the Eisenstadt patent is a single lane form/fill/seal packaging machine meaning that it only forms one package at a time. The film fed through this machine is only wide enough to form one package at a time. The Eisenstadt patent does not disclose any detail regarding the structure of the heat sealing jaws or the manner of heating them. With a single lane, single serving packaging machine, the heat seal dies are small so that the temperature across the dies is easily kept uniform and serum leakers are not a problem. Serum leakers become a problem in multi-lane individual portion packaging machines because the heat seal dies are much longer and maintaining uniform temperature along the die is more difficult. This problem is not appreciated in the Eisenstadt patent. Second Cigallio Declaration, ¶ 7.

The Nakamura Patent teaches conventional form/fill/seal packaging and does not relate to what is known in the industry as portion control size packaging of condiments. The Nakamura Patent teaches using heat sealing jaws comprising heat conducting members 33a and 33b, such as solid rods of copper having a high conductivity, instead of heat tubes or heat pipes as described in amended independent claims 9 and 18 of this application. Col. 8, 1. 39-42. The heat seal jaws disclosed in the Nakamura Patent are not for portion control sized packaging as they are larger and include an integral cutter blade 30 and cutter groove 22 for simultaneously cutting flexible packaging upon heat sealing. The Nakamura Patent describes a concern with heat transfer

through the depth of the heat seal dies from the heating element to the die face. The solution in the Nakamura Patent is to place the high conductivity solid copper rods between the heating elements and the die face of the heat sealing jaws. First Cigallio Declaration, ¶ 9.

The Nakamura Patent expressly teaches that heat tubes (heat pipes) should not be used in the heat sealing dies, taking the position that heat tubes do not distribute heat adequately in the radial direction. Col. 9, 1. 44 - col.10, 1.27. Figs. 11A and 11B of the Nakamura Patent illustrate a prior art heat seal die comprising heat tubes, but the specification of the Nakamura Patent teaches that heat tubes should not be used. First Cigallio Declaration, ¶ 10.

No Prima Facie Obviousness

According to M.P.E.P. §2142, three basic criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or modification, either in the references themselves or the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or suggestion to make the claim combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure. *In re Vaeck*, 947 F.2d 488 20 U.S.P.Q. F.2d 1438 (Fed. Cir. 1991). Furthermore, prior art that teaches away from the claimed invention demonstrates a lack of *prima facie* obviousness. *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986); *In re Fine*, 873 F.2d 1078, 5USPQ 2nd 1596 (Fed. Cir. 1988).

None of the three basic criteria of *prima facie* obviousness are met here and applicants respectfully submit that the Eisenstadt Patent and the Nakamura Patent do not establish a *prima facie* case of obviousness against amended claims 9 and 18 of this application. First, there is no

motivation to modify the Eisenstadt Patent to include heat tubes, because the Nakamura Patent actually teaches away from using heat tubes, does not suggest using heat tubes in portion control sized packaging systems, and certainly does not appreciate the problems particular to the smaller, thinner portion control sized packaging heat seal dies. With portion control sized packaging heat seal dies, there is little concern about heat transfer through the depth of the dies, as they are small and thin. Instead, the concern is uniformity of temperature along the long length of the dies. This problem is well addressed by Applicants' invention as defined in independent claims 9 and 18 of this application, while the Nakamura Patent does not address portion control sized packaging systems or this problem, and even teaches away from using heat tubes. Second Cigallio Declaration, ¶ 8.

Furthermore, there would have been no reasonable expectation of success to one of ordinary skill in the art at the time the invention was made in view of the Nakamura Patent which clearly teaches not using heat tubes in heat seal dies. The Nakamura Patent describes heat tubes as inadequate in heat sealing. Perhaps that is true for the heat dies described in the Nakamura Patent, but Applicants' have shown that it is very effective in heat seal dies for portion control condiment form/fill/seal packaging systems. First Cigallio Declaration, ¶ 13.

The technology of claims 9 and 18 encompasses a preferred embodiment wherein multilane portion control packaging machinery system makes many (equal to the number of lanes) pouches with each cycle of product delivery. This multi-lane, multi-pouch production cycle efficiently produces portion control condiments. The subject matter of claims 9 and 18 provides consistent seal integrity across multiple lanes of this machinery. In contrast, the Nakamura Patent teaches that heat tubes do not adequately maintain an acceptable longitudinal temperature variation (i.e. in the direction "X" as indicated in Figure 1A) for heat-seal jaws (Column 9; lines 44-67). In fact, multi-lane portion control packaging machinery has heat-seal jaws with much less depth (Dimension "Y" in Figure 1b) than the packaging machinery described in the Nakamura Patent. First Cigallio Declaration, ¶ 16.

In the Examiner's Response to Arguments set forth in the Office Action, the Examiner explains that the embodiments in Figs. 11A-B of the Nakamura patent illustrating heat tubes remain pertinent prior art despite any teaching away from using such embodiments in the Nakamura patent. Applicants do not dispute that the Nakamura patent is pertinent prior art. Applicants submit that the Nakamura patent is prior art that teaches away from using heat tubes in portion control packaging manufacturing and is a disincentive to one of ordinary skill in the art to combine the embodiments in the Nakamura patent illustrating heat tubes with the system disclosed in the Eisenstadt reference. The rejection in this Office Action is one of obviousness under 35 U.S.C. § 103. Particularly, the Examiner takes the position that it would have been obvious to combine the teachings of heat tubes in the Nakamura patent with the Eisenstadt patent. Applicants are not arguing that the Nakamura patent is non-analogous art. Applicants position is that the combination of the Nakamura patent and the Eisenstadt patent does not establish a prima facie case of obviousness because the Nakamura patent teaches away from combining heat tube technology with a form/fill/seal machine and therefore teaches away from combining the Nakamura patent with the Eisenstadt patent. Because of this teaching away, there is no motivation to one of ordinary skill in the art to make such a combination. Second Cigallio Declaration, ¶ 9.

Furthermore, the Eisenstadt patent is a single lane, individual serving form/fill/seal packaging machine and therefore the heat seal dies are small, so that the temperature across the dies is easily kept uniform and serum leakers are not a problem. Serum leakers become a problem in mult-lane individual portion form/fill/seal packaging machines because the heat seal dies are much longer and maintaining uniform temperatures along the dies is more difficult. This

problem is not appreciated in the Eisenstadt patent. Thus, there is no motivation to address the problem and combine the Nakamura patent with the Eisenstadt patent. Second Cigallio Declaration, ¶ 10.

The criteria of prima facie obviousness are therefore not met by the Nakamura Patent.

Accordingly, Applicants respectfully submit that the rejection of Applicants' amended claims under the Nakamura patent be removed.

Secondary Considerations

A fourth factor that <u>must</u> be considered in evaluating nonobviousness is a number of "secondary considerations." *Graham v. John Deere*, 383 US1, 17, 86 Supreme Court 684, 694, 148 USPQ 459, 467 (1966); *Simmons Fastener Corp. v. Illinois Tool Works*, 739 F.2d 1573, 1575, 22 USPQ 744, 746 (Fed. Cir. 1984). Such secondary considerations include, but are not limited to, unexpectedness of the results of the claimed invention to those skilled in the art; a long felt but unsatisfied need for the claimed invention while the needed implementing arts and elements have long been available; commercial success of the invention causally related to the invention itself, rather than to companion factors such as advertising or attractive packaging; replacement in the industry of prior art devices by the patented invention; acquiescence by the industry to the patent's validity by taking licenses under the patent; and teaching away from the technical direction in which the patentee went by those skilled in the art. *Graham v. John Deere* at 148 USPQ 467.

Unexpected Results

Embodiments of the invention encompassed by independent claims 9 and 18 demonstrate unexpectedly superior results over prior art devices. Generally, during heat sealing of portion control packaged condiments, the temperature variation across heat seal dies made in accordance with embodiments encompassed by independent claim 9 of this invention are substantially less

than the temperature variation across heat seal dies made in accordance with the prior art (without heat tubes). First Cigallio Declaration, ¶ 17.

Figures 1 and 2, below, are graphic representations of temperature distribution across the top and bottom sealing bars on a type of portion control sized condiment packaging machine called a multi-lane four-side seal pouch machine. Figure 1 illustrates a prior art form/fill/seal machine and Figure 2 illustrates an embodiment of the present invention, as described by claims 9 and 18 of this application. During actual commercial production, the prior art machine shows a temperature difference of 23 degrees F across the front sealing bar of the heat seal die and a 31 degree F difference across the back sealing bar of the heat seal die. Such variation across the width of these seal bars can result in insufficient heating and sealing of the pouches. As can be seen in Figure 2, with an embodiment of the present invention, these differences drop to 8 and 4 degrees F, respectively. First Cigallio Declaration, ¶ 18.

The heat seal die of the prior art machine was made of steel and did not include heat tubes. The heat seal die of the invention embodiment was made of hardened 440 stainless steel and included heat tubes. First Cigallio Declaration, ¶ 19.

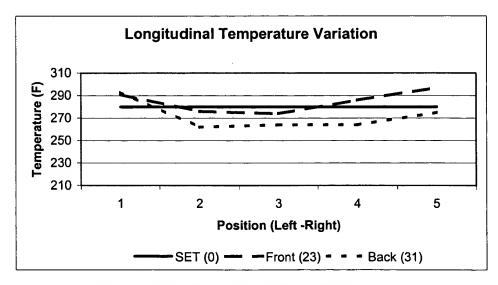


Figure 1: Operating Profile Without Invention

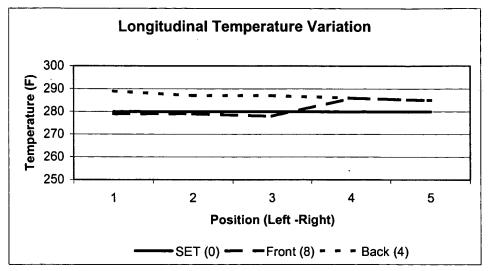


Figure 2: Operating Profile With Invention

Applicants submit again for consideration the unexpected results illustrated in Figure 2 hereinabove as evidence of nonobviousness. These results are particularly unexpected in view of the disclosure in the Nakamura Patent, which teaches that heat tubes are inadequate for controlling temperature in heat seal dies. First Cigallio Declaration, ¶ 20.

Commercial application of embodiments of this invention have also been unexpectedly successful. Golden States Foods (GSF) is a licensee under this patent application and uses form/fill/seal machines for manufacturing portion control packaged condiments such as ketchup. GSF is the largest supplier of liquid products to McDonald's restaurants. First Cigallio Declaration, ¶ 21.

In January 2002, the owner of this patent application, Printpack, in conjunction with GSF, installed embodiments of the invention encompassed by claims 9 and 18 of this application in a GSF liquid products plant in Conyers, Georgia. The embodiments implemented by Printpack and GSF were multi-lane, four side form/fill/seal machines for making portion control packaged condiments equipment with hardened stainless steel cross heat seal dies including longitudinal heat tubes (hereinafter the Embodiments). Prior to implementation of these Embodiments, GSF

operated this form/fill/seal machines with cross heat seal dies made of steel and lacking heat tubes. (the Prior Art Machines). First Cigallio Declaration, ¶ 22.

The Prior Art Machines operated by GSF exhibited temperature variations exceeding 60°F across the cross heat seal dies, while specifications for the packaging film used normally set a 20°F variation. Such a discrepancy between film specifications for heat seal die temperature variation and actual cross heat seal die temperature variation in the Prior Art Machines reduced the seal integrity of the portion control packaging and increased the number of serum leakers. First Cigallio Declaration, ¶ 23.

The Embodiments installed and implemented at GSF in January 2002 reduced the temperature variation across the cross heat seal dies to less than 10°F and thereby significantly enhanced the cross seal integrity of the portion control packaging produced. As a result, the number of cases of portion control packaged condiments withheld from distribution by GSF due to serum leakers dropped by 79% and labor necessary to rework such withheld cases dropped by about \$75,000 annually. The reduction in serum leakers also enhanced the quality of product delivered to GSF's customers. First Cigallio Declaration, ¶ 24.

Thus, the success of GSF in commercially operating embodiments of this invention is further evidence of the nonobviousness of the subject matter in claims 9 and 18 of this application.

Long Felt, But Unsatisfied Need

Reducing serum leakers in portion controlled packaged condiments has been a long felt, but unsatisfied need in the condiment packaging. First Cigallio Declaration, ¶ 25. The publication titled "Portion Control and Flexible Packaging: A Reference Manual for the Dressings & Sauces Industry First Edition;" (The Association of Dressings & Sauces; August 1999; Atlanta, Ga; 150 pages) (hereinafter the "Manual") provides guidelines for portion control

packaging of liquid containing materials such as condiments and sauces. Applicants submit herewith this entire publication. This Association of Dressings & Sauces serves the market at which the invention described in the present application is directed. The Manual generally indicates that serum leakers are considered a serious problem in the portion control packaging industry. See *Manual*, pages 132-137. The Manual advises as follows:

"Packaging films have changed dramatically over the last 20 years, yet serum leakers were there then and they are still here now. Studies have been done varying sealant materials and sealant thickness along with packaging machine conditions."

See Manual, page 134.

The Manual speculates that "gathering of the film and subsequent wrinkles may be the cause of most serum leakers." See *Manual* page 132. The *Boeckmann* patent cited in the Office Action also focuses on wrinkles as the source of the problem. The Manual suggests that portion control packaging machines must be maintained very diligently to minimize serum leakers. See *Manual*, page 134.

In "Table 8-4-Leaker analysis for Problem Solving", the Manual describes seven (7) types of defects from leaking, three (3) of which involve seal area faults.

Possible Cause	Pattern	Action
Inadequate amount	No bonding in seal area.	Confirm thickness of
of sealant	Gaps or spaces in seam	sealant layer against
		specification
Defective	Reduced bond strength	Packaging material
composition of	in seal area. Seam	defect
sealant layer	degenerates over storage	
Sealing temperature	No bonding in seal area.	Test and verify
too low on sealing	Leakers occur in same	temperatures of heat
bars	lane of equipment	seal bars. Replace
		units as needed
Inadequate pressure	Reduced bond strength	Verify pressure with
on sealing bars, or	in seal area. Leakers will	pressure sensitive
poor mating of	occur in repeat locations	paper. Replace
sealing bars		springs as needed
Inadequate dwell	Reduced bond strength	Reduce operating
time on sealing bars	in seal area. Leakers	speeds. Timing
•	occur in repeat locations	adjustment
Excessive pressure	Small breaks	1) Adjust
on sealing bars	across seal area, or	equipment.
	localized	
	2) Melted	2) Reduce and
	appearance or	verify sealing bar
	fracturing at seams	temperatures
Excessive heat or	Serum leakage from	Reduce storage
pressure on the	package during storage.	effect if possible.
package in storage	Very small seam	Increase grade of
may contribute to	interruption	corrugated material
serum leaker		if needed.
occurrence from		
any cause		
	Inadequate amount of sealant Defective composition of sealant layer Sealing temperature too low on sealing bars Inadequate pressure on sealing bars Inadequate dwell time on sealing bars Excessive pressure on sealing bars Excessive pressure on sealing bars	Inadequate amount of sealant Defective Composition of Sealant layer Sealing temperature too low on sealing bars Inadequate pressure on sealing bars Inadequate dwell time on sealing bars Excessive pressure on sealing bars Excessive pressure on sealing bars Excessive heat or pressure on the package in storage may contribute to serum leaker occurrence from Reduced bond strength in seal area. Leakers will occur in repeat locations Reduced bond strength in seal area. Leakers will occur in repeat locations Small breaks across seal area, or localized 2) Melted appearance or fracturing at seams Excessive heat or pressure on the package in storage may contribute to serum leaker occurrence from

Manual, Pp. 80-82

The *Manual* is a current summary of industry beliefs and practices presents conflicting views on the causes of and remedies for leakers in multi-lane portion control packages. High temperatures and pressures are implicated in some cases (Table 8-4, 5.3, 5.5, and 6.2), while Appendix A No. 4 blames low temperatures and pressures. The one potentially consistent remedy, "reduce operating speed" (Table 8-4, 6.2) is not an economical option. While mention is made about "adjusting" and maintaining the performance of the packaging machinery components, no consideration is given to the ability of the machinery to maintain the tolerances necessary to prevent leakers and there is no recognition that uniformity of temperature across the heatseal die causes leakers. First Cigallio Declaration, ¶ 28.

Furthermore, according to cited U.S. Patent 3,677,329 issued to *Kirkpatrick*, heat tubes have been available for over thirty years, but to Applicants' knowledge, they have not been implemented in portion control sized packaging heat seal dies until Applicants' invention. This could be due to the prior understanding in the art that heat tubes will be unsuitable, as taught by the *Nakamura* Patent. First Cigallio Declaration, ¶29.

The long felt need for reducing serum leakers in portion control size packaged condiments is finally satisfied by the invention described in the claims of the present application. The combination of the long felt need for reducing serum leakers and the concurrent availability of heat tubes and other endeavors establishes the nonobviousness of the system and method for portion control size packaging described in the independent claims of this application. Applicants respectfully submit that with this evidence of nonobviousness, the obviousness rejection based on *Nakamura* and *Boeckmann* is overcome.

Commercial Success, Licenses, and Replacement of Prior Art Devices

The owner of the Application, Printpack, currently has licensed this technology to two producers of portion control-packaged condiments: C.F. Sauer, Mauldin, SC (CFS) and Golden

States Foods, Conyers, GA (GSF). Both of these companies produce portion control-packaged condiments for a variety of fast food restaurants. Dougherty Declaration, ¶ 3.

The licenses referenced above are contingent on the sale of specified amounts of packaging material sales by Printpack to the licensees over the next several years. Under the licensees, Printpack replaced the existing heat seal dies in the licensee's form/fill/seal machines for production of portion control sized packaging and supplies 60% of the licensees packaging material volume for portion control packaging at the same price provided by competitors. In these cases, Printpack and the licensees cooperated in experiments that demonstrated the effectiveness of the technology. The licensing arrangements were made due to direct contact by Printpack representatives with the licensees. Printpack's advertising of the claimed invention was limited to this direct contact. Therefore, the commercial success of the claimed invention is not due to pricing or advertising, but rather, the technology itself. Dougherty Declaration, ¶ 4.

This commercial success, including the licensing of the technology and the replacement of prior art machines and operation with embodiments of this invention, is further evidence of the nonobviousness of the subject matter of claims 9 and 18 of this application.

Prior Art Teaches Away

Lastly, as explained in detail hereinabove, the fact that those skilled in the art taught away from the use of heat tubes in heat seal applications according to the Nakamura patent is still more evidence of nonobviousness of the subject matter of independent claims 9 and 18.

Applicants respectfully submit that the evidence of the non-obviousness of claims 9 and 18 is overwhelming and the rejection of those claims should be withdrawn.

Conclusion

The foregoing is submitted as a full and complete response to the Office Action and the allowance of all claims is respectfully requested. If there are any issues which can be resolved by

a telephone conference or an Examiner's Amendment, the Examiner is invited to call the undersigned attorney at 404.853.8064.

Respectfully submitted,

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